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File: USPT

May 27, 2003

DOCUMENT-IDENTIFIER: US 6571234 B1

TITLE: System and method for managing online message board

Abstract Text (1):

Queries and postings made to an online electronic message board are managed by a number of community and customized software search robots. The robots interact with subscribers to access, retrieve and post messages according to content groupings and classifications that reflect the collective shared interests, desires, etc., of such subscribers. Because the information is already pre-classified and indexed in such fashion, subscribers are given rapid access to key information that is most of interest to them, enhancing their overall experience with the system.

Brief Summary Text (4):

The present invention relates to managing queries and postings made to an online electronic message board. The invention is especially suited for permitting subscribers to interact with software search robots to access, retrieve and post messages according to classification criteria that mirror the interests, desires, etc., of such subscribers. These features enhance the user's experience with the online message board system, thus increasing the user's interaction time with such system.

Brief Summary Text (15):

Third, while the user is at the second stage of the search process, he/she is limited to seeing the messages in display area 110 as they are stored at the website; in other words, indexed by Topic, Author, Date, etc., but with no additional screening/filtering capability. This means that the user is sometimes (depending on popular the topic is) forced to browse through hundreds of messages (postings) to find an item of interest. While the prior art does allow some searching capability within this second stage, it is relatively primitive in that it cannot transcend the logical area bound by messages for Company A; in other words, it is not possible to search across all subjects for a keyword of interest. Again, this means that the user is not receiving complete information, and this detracts from the appeal of such system. Also, the search constructs possible with the prior system are very limited, and do not allow for advance filtering techniques, so that, for example, the user can use multiple filters to find content. For instance, locating postings by a specific author having specific keywords is not possible at this time. Moreover, within this second stage, the user must formulate and define his/her own search queries for each new query, and then pass this request to the service provider, where it is processed to return relevant hits to the user. This can take time, of course, and because this portion of the interface has no "memory"--in the sense of remembering the user's predilections and search interests/constructs--the user is required to waste time each time he/she visits this stage to re-formulate the search query to retrieve messages of interest. It would be far more advantageous, for example, if the interface could learn, remember, and automate common query and filtering criteria from the user.

Brief Summary Text (31):

Yet another related object is to permit a user of an online service to interact with search robots located on an internet server to help formulate, execute and remember search queries of interest to such user.

Brief Summary Text (32):

A preferred message management system of the present invention can be used with an online electronic message board, and generally includes: a content sorting routine that runs on a computer associated with the message board system for sorting electronic messages and storing them such that they are searchable by users according to information categories. A second query handling routine also executing on this same computer is configured so that: (i) it can receive a user query initiated within a user query interface operating on the user's computer system, and (ii) it can locate a selected set of electronic messages in response to the user query; and (iii) it can transmit such selected set of electronic messages to the user query routine interface in a form suitable for perceiving by the user. The query handling routine is preferably implemented as a set of community and customized search robots. Thus, for ease of searching, reviewing, etc., the message management system interacts with the user using only a single screen display portion of the user query interface.

Brief Summary Text (33):

As noted above, the user query is based on predefined query parameters available to all of the users within the user query interface, so that they correspond directly to the predefined information categories, and everyone using the message board can access such messages using community based robots. A user query can also be handled, however, when it is instead based on customized query parameters for a particular user, so that a customized search robot on the message management system is invoked for locating the relevant electronic messages. These latter types of electronic messages may or may not be made available to all users of the system, depending on the message board system provider's preference.

Detailed Description Text (4):

First, to keep the online service with current information of interest to the community of users of such service, a number of independent software content extraction/posting robots 230 perform raw data content extraction, on an as-needed basis, from content sources 225 using a set of program routines suitable for execution on server 220. Community search robots 231 and customized search robots 232 help build predefined collections of message postings from such raw content, based in accordance with broad and narrow guidelines as discussed in more detail below. These predefined collections of message postings provide a significant improvement over the prior art, which, as mentioned above, merely uses raw content feeds for users. Instead of having to manually review and sort out which newsgroups may be of interest, the present system does all the work for the user, and breaks the data down into clear, manageable categories that are easily understood, and more importantly, logically structured to mirror interests and organizational constructs within the community of users.

Detailed Description Text (6):

Generally speaking, the term "postings" refer to content/messages generated by human users. Contributions from subscriber-user postings of messages are handled by posting logic routine 235. Finally, a database routine 240 executing on server 220 maintains a database of data items 242, and constructs indexes 241 of the same in accordance with rules, instructions and feedback from the service provider, and in cooperation with community search robots 231 and customized search robots 232.

Detailed Description Text (8):

Connected to server 220 across a data link 245 (such as a telephone line) is a user computer system (not shown) running a conventional web browser (also not shown) for viewing and interacting with programs and data located at a website maintained by server 220. The details of the user's computer system and web browser are not material to the present invention, and are therefore not discussed at length here. The only important criterion is that such web browser and computer system have the capability of handling Java.TM. based applets (or similarly capable code) which

applets contain software code associated with permitting the user to operate/interact with interaction window 250, community search robots 231, customized search robots 232, and posting logic 235. In general, interaction window 250 is a highly flexible, integrated interactive window that facilitates message search query formulations, message retrievals, message postings, etc., on the part of the user. In response to such message queries, search robots on server 220 return a number of "hits" or matching records 251. The manner in which interactive window 250 assists in these operations and coordinates with posting logic 235 and search robot 230 is discussed in more detail below in connection with FIG. 3.

Detailed Description Text (9):

Returning to the operation of the search robots in FIG. 2: search robots are well-known in the art, and a basic variation of these can be found in conventional online search engines operated by such online providers as Yahoo!, Excite, AOL, etc. These search robots can be easily modified to perform various tasks associated with the present inventions. In particular, a first kind of extraction robot 230 of the present invention periodically retrieve content (i.e., material that may be of general interest to the subscribers to the online service provider) from outside source such as UseNet and/or other online message board systems. The content is "extracted" from these sources according to set of rules, filters or criteria specified by the online provider, and/or gleaned from community based traffic monitorings as noted below. This process can be highly automated so that, for example, a particular search robot can be instructed to search at a particular time of the day for information concerning a particular company at a particular third party internet server. The benefits of this approach include the fact that the message board system 200 provides up-to date, comprehensive content on a variety of subjects.

Detailed Description Text (11):

In practice, content extraction robots 230 are used initially by the service provider to construct an initial content base before the message board system is opened up for subscribers. This ensures that the users of such service will have a preexisting library of information to draw upon when the service is first used. Before this point, however, the information is broken down and sorted into a number of subject matter areas, which subject matter areas represent logical collections of content according to a (potentially different) set of service provider (or user) specific rules, filters, criteria, etc. These logical groupings are based both on perceived interests of the subscribers of the online service provider, and the requirements of database management routine 240. For example, a service provider may request that a search robot 230 extract content (in this case, posted messages, press releases, news reports, etc.) about companies in a particular industry from a particular discussion board and/or news site. After receiving content from such source, it can be stored in database 270. At the same time, or after this point, this information can be divided according to a sorting mechanism that includes such groupings as (1) stock trading related information (i.e., stock price, patterns, fundamentals, and the like); (2) product related information; (3) marketing related information; (4) sales/financial information; (5) author/source; (6) date, etc. The information in these subject matter areas is then broken down further into class and sub-classifications as desired, and then stored as additional indices 261 by database management routine 240. This process is dynamic, iterative, and continuous, so that a number of community/custom search robots may be simultaneously parsing database 270 to create, update or remove their associated subject matter area/class/subclass indices. In contrast to community search robots 231, whose efforts result in compilations/indices usable by the community as a whole, customized search robots 232 create logical collections of messages based on individual user filtering criteria. To ensure that the independent functionality provided by customized search robots 232 does not overwhelm server 220, only a limited number of such robots are made available to subscribers.

Detailed Description Text (12):

Detailed Description Text (13):

Detailed Description Text (18):

Detailed Description Text (29):

http://westbrs:9000/bin/cgi-bin/accum_query.pl?MODE=%20%20%20%20Display%20%2... 11/17/04

fashion which is slow and unproductive. More importantly as messages are extracted and posted, they are continuously built as collections of messages falling within a particular predefined subject matter area/class/subclass index, corresponding to the message query filter parameters 317 presented in the user interface. In other words, when the user picks the "Rounded Top" sub-class noted in FIG. 3b, there is already a predefined index 241 that has been built to contain all the relevant messages corresponding to this subclass/filtering selection. Notably, within the server database 242, messages grouped under the subclass "Rounded Top" are placed there according to sorting logic as mentioned above, so that for example, when responding to a message in the "Rounded Top" sub-category area, the response itself would also fall within this area, despite the fact that it may contain no mention of this term anywhere in the response.

Detailed Description Text (32):

As the appropriate group of messages are located by community search robot 231, a visible listing of the same is provided to the user in a second display area 320, in what can be thought of essentially as a retrieved message listing display area, or a message group detail area. In this area, each message matching the user-selected filter is identified by an entry 325 that lists such data as subject, author, date, and/or a few words excerpted (usually the first few words) for such message. As they are all generally related to the same logical "topic" (by virtue of the query operation) it is not necessary at this stage to waste display space in this area by including a description for this parameter. After all the matching entries of the group are retrieved, they can be sorted in conventional fashion (i.e., by date, author, etc.) by activating sorting buttons 330 above such entries.

Detailed Description Text (33):

At this point, the user can use any one of a number of different commands to perform operations with the messages 325 listed with an entry in area 320. First, the user can discard the retrieved messages. A new search query can be executed, simply by selecting another one of the filter parameters 317 in message query menu 316, and without ever leaving interface 310. Alternatively, a complex search query might be executed by selecting more than one query filter parameter 317, so that only entries satisfying both criteria (i.e., two overlapping logical groups of messages) are retrieved by community search robot 231. While this is more slow (because it involves more effort on the part of search robots on the server to coordinate two searches) and may reduce usability, it can be included if desired for limited circumstances.

Detailed Description Text (37):

An additional subject matter area control button 312 labelled "Custom" includes a menu of control options reserved for customizing the interface to the user's particular needs and tastes. This menu, shown in FIG. 3c, can provide a variety of additional functionality. For example, it provides an additional list of filtering options that are used as a logical screen or overlay over other search and query operations performed under other subject matter areas 312. For instance, as noted earlier, a user might elect to always ignore postings by a particular author, regardless of their relevance to a particular query made under a particular subject area. These postings, then, can be made to never appear to the user in message listing rare 320, even if they otherwise match the search logic used by the user for a particular search operation. Alternatively, they can still be retrieved by marked with some indicia as noted earlier. Similarly, the user might compile a list of his/her favorite authors, and by selecting this entry in the menu area 315, all of this person's entries might be displayed in message listing area 320.

Detailed Description Text (38):

Other more complex searching features or intelligent content groupings can be implemented by providing a limited number of dedicated, customizable search robots 232 on server 220 to each member of the community. These dedicated search robots

Detailed Description Text (51):

Detailed Description Text (58):

Detailed Description Text (61):

Detailed Description Text (68):

http://westbrs:9000/bin/cgi-bin/accum query.pl?MODE=%20%20%20%20Display%20%2... 11/17/04

feedback. (2) User interface 300 (FIG. 3) can be altered dynamically so that subject matter headers 312, or query parameters 317, can be re-arranged based on their popularity. In other words, the interface can be made to ergonomically self-tune itself so that more popular items appear earlier in the menu, or at shallower branches of the tree menu 316, minimizing the burden on the user to find subjects of interest. (3) Extraction control by prioritization routine 418 (FIG. 4) can be tailored based on data in tabulation databases 580-583, so that, for example, content is retrieved by the search robots in proportion to the interest level of the community. This permits a message board system to learn the interests of its users, and then located and extract content in direct relation or proportion to such content's popularity within such community. (4) New areas for content extraction can be gleaned from databases 580-583 and passed in the form of an auto-generated community based query 404 (FIG. 4) based on analysis of keyword extractions of user message postings. Again, by studying the messages posted by its own users, the system can learn to find information most likely to retain the interest of such subscribers. Thus, subscribers can be given more of the information they have already expressed a strong interest in. (5) Statistics on user messages, queries, and customizations can be packaged for general community consumption as an automatically generated "hot item" list (see FIG. 3D). Thus, users can immediately be alerted to new topics, subjects, authors, useful interface customizations, etc., that are of current interest, further increasing the appeal of the system, since now users can learn and benefit from individual and aggregate behavior, interests of the community. (6) As noted earlier, decisions on how to build fast, pre-compressed files of popular subject matter areas can also be easily determined from studying community wide interest, as expressed in queries, postings, etc. This results in users getting more of the information they want, and faster. (7) Demographics information concerning the subscribers can be indirectly gleaned from observing their queries and responses as posted to the system. This information, too, can be used for determining appropriate advertisers, advertising, etc. For example, in a medical based community, if message traffic suggests a strong following and discourse in certain types of medications (say brand X), this permits the service provider to more accurately identify, select and target appropriate advertisers, ads, etc., tailored to such audience. Furthermore, even the initial selection and setup of subject areas, classes, sub-classes, etc., can be designed based on marketing research based criteria, so that the mere selection of a particular subject area/class combination by a subscriber can be correlated immediately with other typically associated/expected interests of such user, user demographics, user financial profiles, etc. This is less intrusive and more likely to result in accurate user profiling than conventional lengthy online surveys, where people are inclined to provide incomplete and/or inaccurate information because of privacy sensitivities. In other words, a particular user's selections of materials can be monitored and compared against reference data for a normalized group of individuals (i.e., from market or focus group research) to determine a probable education level, income, assets, and the like for such individual. This method is more accurate in collecting true user profile information, since it is constantly refined, updated and improved (based on user selections) and does not require explicit input from him/her that would cause them to be less forthcoming about their true profile characteristics. This, in turn provides a tool for service providers to construct a more accurate profile of his/her subscribers, so that content, ads, etc., can be more effectively managed and tailored to the community as a whole.

Detailed Description Text (71):

Operation of Content Search System, including Community and Customized Search Robots

Detailed Description Text (74):

Therefore, when a user first interacts with message board system of the present invention, a user interface routine 640 at server 220 (FIG. 2) downloads the user's previously defined interface 300 (FIG. 3b), where it executes as a java based

Detailed Description Text (75):

Detailed Description Text (76):

CLAIMS:

41. The method of claim 40, wherein selected information for information categories occurring more frequently in user search queries is retrieved at a higher priority than information for information categories occurring less frequently.

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